

The Office Action states (in brief) that Noguchi teaches a process for forming at least one transistor on a substrate, but fails to teach a substrate comprising a polyphenylene polyimide as required by all the present claims. The Office Action further states that the Abstract teaches a substrate comprising such a polyphenylene polyimide, and that it would have been obvious to one of ordinary skill in the art of making semiconductor devices to incorporate the teaching of the Abstract into Noguchi's method because in doing so a substrate [that] has excellent heat resistance, cold resistance, mechanical property, electric property, wear resistance, chemical resistance and curling resistance can be obtained.

The applicants do not dispute that Noguchi teaches a process for forming at least one transistor on a substrate, but note that in Noguchi the substrate 100 is made of a quartz glass, and hence is a rigid substrate. Furthermore, the applicants do not dispute that the Abstract teaches a substrate comprising a layer of polyphenylene polyimide and a layer of metal, and that this substrate has, *inter alia*, excellent heat resistance. However, ~~the Abstract~~ only teaches that this substrate is useful as a substrate for formation of flexible printed circuits. As will readily be apparent to the Examiner and anyone skilled in the art of circuit fabrication, the requirements for a substrate for formation of printed circuits, which are typically formed either by printing patterns of conductive ink on the substrate or by metallizing the substrate and patterning the resultant metal layer to form conductors, are very different from the requirements for forming transistors on a substrate by deposition of a layer of semiconductor material on the substrate. Hence, it would not be apparent to one of ordinary skill in the relevant art whether the polyimide/metal flexible substrate taught by the Abstract could be used in the Noguchi process.

~~In this connection,~~ it should be noted that both the Abstract and Noguchi tacitly acknowledge differences between the substrates used for printed circuits and those used for thin-film transistor arrays. As already noted, the Abstract states that its polyimide/metal flexible substrate is suitable for use in flexible printed circuits but makes

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no mention of suitability for use as a substrate for thin film transistor arrays. Given the relative costs per unit area of printed circuits and thin film transistor array devices (for example, backplanes for liquid crystal displays), and the fact that the patentee of the Abstract is Sumitomo, a large and diversified Japanese manufacturer of electronic products, there would appear to be every incentive for the inventors of the Abstract to claim that their substrate would be useful as a substrate for thin film transistor arrays if such a claim could plausibly be made on the basis of its suitability as a substrate for printed circuits. Furthermore, Noguchi, as already noted, forms his thin film transistors on quartz glass, a material which is not, to the best of the undersigned's knowledge, used as a substrate for printed circuits, presumably because its lack of flexibility and brittleness render it disadvantageous for the purpose. Thus, the references used in support of the 103 rejection themselves indicate that the art recognizes a clear distinction between substrates used for printed circuits and those used for thin film transistor arrays, and that a substrate used for the former is not necessarily (or even probably) useful as a substrate for the latter.

The foregoing arguments are applicable to all of claims 1-25. However, there is an additional reason why claim 12 (which is not dealt with separately in the Office Action) is patentable over the references of record. Claim 12 is directed to according to claim 1 wherein the substrate comprises a metal layer on the side thereof remote from the semiconductor material, and the metal layer has walls defining apertures extending through the metal layer. Neither Noguchi nor the Abstract disclose the use of a metal layer having apertures extending therethrough, and hence claim 12 cannot be obvious over these references.

For all the foregoing reasons, the 35 USC 103 rejection is unjustified and should be withdrawn.

Reconsideration and allowance of all claims remaining in this application are respectfully requested.

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A Petition for a three month extension of time for the filing of this Amendment, including an authorization to charge the fee for this Petition to the assignee's Deposit Account, is being filed herewith.

Respectfully submitted,



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